WHAT IS CLAIMED IS:

1. A microarray comprising:
a substrate comprising a primary aromatic amine diazotized surface; and
at least one biomolecule covalently bound to said primary aromatic amine diazotized surface.

2. The microarray of claim 1, wherein said diazotized surface comprises a glass surface.

3. The microarray of claim 2, wherein said diazotized surface comprises a glass bead.

4. The microarray of claim 2, wherein said diazotized surface comprises a glass slide.

5. The microarray of claim 1, wherein said diazotized surface comprises a polymer surface.

6. The microarray of claim 5, wherein said diazotized surface comprises a plastic surface.

7. The microarray of claim 6, wherein said diazotized surface comprises polyethylene terephthalate.

8. The microarray of claim 1, wherein said diazotized surface comprises a silicon wafer.

9. The microarray of claim 1, wherein said diazotized surface comprises a ceramic surface.

10. The microarray of claim 1, wherein said diazotized surface comprises a metal oxide surface.

11. The microarray of claim 1, wherein said diazotized surface comprises a clay surface.

12. The microarray of claim 1, wherein said diazotized surface comprises a noble metal surface.

13. The microarray of claim 12, wherein said diazotized surface comprises a gold surface.

14. The microarray of claim 12, wherein said diazotized surface comprises a silver surface.

15. The microarray of claim 12, wherein said diazotized surface comprises a copper surface.

16. The microarray of claim 1, wherein said at least one biomolecule comprises a plurality of biomolecules.

17. The microarray of claim 16, wherein said plurality of biomolecules comprises at least two different biomolecules.

18. The microarray of claim 1, wherein said biomolecule comprises single-stranded DNA.

19. The microarray of claim 1, wherein said biomolecule comprises double-stranded DNA.

20. The microarray of claim 1, wherein said biomolecule comprises protein.

21. The microarray of claim 1, wherein said biomolecule comprises a ribozyme.

22. The microarray of claim 1, wherein said biomolecule comprises RNA.

23. The microarray of claim 1, wherein said biomolecule comprises an aptamer.

24. The microarray of claim 1, wherein said diazotized surface is part of a substrate having a thickness of approximately 1 mm.

25. The microarray of claim 1, wherein said diazotized surface comprises a siloxy diazotized surface.

26. The microarray of claim 25, wherein said siloxy diazotized surface comprises a glass surface.

27. The microarray of claim 26, wherein said siloxy diazotized surface comprises a glass bead.

28. The microarray of claim 26, wherein said diazotized surface comprises a glass slide.

29. The microarray of claim 25, wherein said siloxy diazotized surface comprises a polymer surface.

30. The microarray of claim 29, wherein said siloxy diazotized surface comprises a plastic surface.

31. The microarray of claim 30, wherein said siloxy diazotized surface comprises polyethylene terephthalate.

32. The microarray of claim 25, wherein said siloxy diazotized surface comprises a silicon wafer.

32./ The microarray of claim 25, wherein said siloxy diazotized surface comprises a ceramic surface.

33. The microarray of claim 25, wherein said siloxy diazotized surface comprises a clay surface.

34. The microarray of claim 25, wherein said siloxy diazotized surface comprises a metal oxide surface.

35. The microarray of claim 25, wherein said siloxy diazotized surface comprises a siloxy amine diazonium group.

36. The microarray of claim 35, wherein said siloxy diazonium group comprises p-diazoniumphenyltrimethoxysilane salt.

37. The microarray of claim 25, wherein said at least one biomolecule comprises a plurality of biomolecules.

38. The microarray of claim 37, wherein said plurality of biomolecules comprises at least two different biomolecules.

39. The microarray of claim 25, wherein said biomolecule comprises single-stranded DNA.

40. The microarray of claim 25, wherein said biomolecule comprises double-stranded DNA.

41. The microarray of claim 25, wherein said biomolecule comprises protein.

42. The microarray of claim 25, wherein said biomolecule comprises a ribozyme.

43. The microarray of claim 25, wherein said biomolecule comprises RNA.

44. The microarray of claim 25, wherein said biomolecule comprises an aptamer.

45. The microarray of claim 25, wherein said siloxy diazotized surface is part of a substrate having a thickness of approximately 1 mm.

46. The microarray of claim 1, wherein said diazotized surface comprises a thiolate diazotized surface.

47. The microarray of claim 46, wherein said thiolate diazotized surface comprises a noble metal surface.

48. The microarray of claim 47, wherein said thiolate diazotized surface comprises a gold surface.

49. The microarray of claim 47, wherein said thiolate diazotized surface comprises a silver surface.

50. The microarray of claim 47, wherein said thiolate diazotized surface comprises a copper surface.

51. The microarray of claim 46, wherein said thiolate diazotized surface comprises a thiolate amine diazonium group.

52. The microarray of claim 51, wherein said thiolate amine diazonium group comprises p-diazoniumthiophene salt.

53. The microarray of claim 46, wherein said at least one biomolecule comprises a plurality of biomolecules.

54. The microarray of claim 53, wherein said plurality of biomolecules comprises at least two different biomolecules.

55. The microarray of claim 46, wherein said biomolecule comprises single-stranded DNA.

56. The microarray of claim 46, wherein said biomolecule comprises double-stranded DNA.

57. The microarray of claim 46, wherein said biomolecule comprises protein.

58. The microarray of claim 46, wherein said biomolecule comprises a ribozyme.

59. The microarray of claim 46, wherein said biomolecule comprises RNA.

60. The microarray of claim 46, wherein said biomolecule comprises an aptamer.

61. The microarray of claim 46, wherein said thiolate diazotized surface is part of a substrate having a thickness of approximately 1 mm.

62. A siloxy diazotized surface.

63. The siloxy diazotized surface of claim 62, wherein said siloxy diazotized surface comprises a glass surface.

64. The siloxy diazotized surface of claim 63, wherein said siloxy diazotized surface comprises a glass bead.

65. The siloxy diazotized surface of claim 63, wherein said siloxy diazotized surface comprises a glass slide.

66. The siloxy diazotized surface of claim 62, wherein said siloxy diazotized surface comprises a polymer surface.

67. The siloxy diazotized surface of claim 66, wherein said siloxy diazotized surface comprises a plastic surface.

68. The siloxy diazotized surface of claim 67, wherein said siloxy diazotized surface comprises polyethylene terephthalate.

69. The siloxy diazotized surface of claim 62, wherein said siloxy diazotized surface comprises a silicon wafer.

70. The siloxy diazotized surface of claim 62, wherein said siloxy diazotized surface comprises a ceramic surface.

71. The siloxy diazotized surface of claim 62, wherein said siloxy diazotized surface comprises a ceramic surface.

72. The siloxy diazotized surface of claim 62, wherein said siloxy diazotized surface comprises a clay surface.

73. The siloxy diazotized surface of claim 62, wherein said siloxy diazotized surface comprises a siloxy amine diazonium group.

74. The siloxy diazotized surface of claim 73, wherein said siloxy diazonium group comprises p-diazoniumphenyltrimethoxysilane salt.

75. The siloxy diazotized surface of claim 62, wherein said siloxy diazotized surface is part of a substrate having a thickness of approximately 1 mm.

76. A method for forming a microarray comprising:

treating an oxidized surface with a siloxy amine to form a siloxy amine treated surface;

treating said siloxy amine treated surface with a diazotizing agent to form a siloxy diazotized surface; and

contacting said siloxy diazotized surface with at least one biomolecule to form a microarray in which said at least one biomolecule is covalently bound to said siloxy diazotized surface.

77. The method of claim 76, wherein said siloxy amine comprises a primary aromatic amine.

78. The method of claim 77, wherein said siloxy amine comprises p-aminophenyl trimethoxysilane (ATMS).

79. The method of claim 76, wherein said siloxy amine treated surface is formed by treating said oxidized surface with a siloxy amine comprising primary aromatic amine.

80. The method of claim 79, wherein said siloxy amine comprises p-aminophenyl trimethoxysilane (ATMS).

81. The method of claim 76, wherein said biomolecule contains a powerful electron-releasing group.

82. The method of claim 76, wherein said diazotizing agent comprises $NaNO_2$ and HCl.

83. The method of claim 76, wherein said siloxy diazotized surface is formed from said siloxy amine treated surface by exposing said siloxy amine treated surface to 5.2 mM $NaNO_2$ and 0.26 M HCl at 0-5 degrees centigrade for 30 minutes.

84. The method of claim 76, wherein said siloxy diazotized surface is formed from said siloxy amine treated surface by exposing said siloxy amine treated surface to 5.2 mM $NaNO_2$ and 0.26 M HCl at 0-5 degrees centigrade for 10-30 minutes.

85. The method of claim 76, wherein said siloxy diazotized surface is formed from said siloxy amine treated surface by exposing said siloxy amine treated surface to 5.2 mM $NaNO_2$ and 0.26 M HCl at 5-15 degrees centigrade for 30 minutes.

86. The method of claim 76, wherein said siloxy diazotized surface is formed from said siloxy amine treated surface by exposing said siloxy amine treated surface to 5.2 mM $NaNO_2$ and 0.26 M HCl at 5-15 degrees centigrade for 10-30 minutes.

87. The method of claim 76, wherein said siloxy diazotized surface is formed from said siloxy amine treated surface by exposing said siloxy amine treated surface to 5.2 mM $NaNO_2$ and 0.26 M HCl at 15-25 degrees centigrade for 30 minutes.

88. The method of claim 76, wherein said siloxy diazotized surface is formed from said siloxy amine treated surface by exposing said siloxy amine treated surface to 5.2 mM $NaNO_2$ and 0.26 M HCl at 15-25 degrees centigrade for 10-30 minutes.

89. The method of claim 76, wherein said siloxy diazotized surface is formed from said siloxy amine treated surface by exposing said siloxy amine treated surface to 5.2 mM $NaNO_2$ and 0.26 M HCl at room temperature for 30 minutes.

90. The method of claim 76, wherein said siloxy diazotized surface is formed from said siloxy amine treated surface by exposing said siloxy amine treated surface to 5.2 mM $NaNO_2$ and 0.26 M HCl at room temperature for 10-30 minutes.

91. The method of claim 76, further comprising treating a substrate surface with an oxidizing agent to form an oxidized surface.

92. The method of claim 91, wherein said substrate surface comprises a polymer surface.

93. The method of claim 92, wherein said substrate surface comprises a plastic surface.

94. The method of claim 93, wherein said substrate surface comprises polyethylene terephthalate.

95. The method of claim 76, wherein said siloxy diazotized surface comprises a glass surface.

96. The method of claim 95, wherein said siloxy diazotized surface comprises a glass bead.

97. The method of claim 95, wherein said siloxy diazotized surface comprises a glass slide.

98. The method of claim 76, wherein said siloxy diazotized surface comprises a polymer surface.

99. The method of claim 98, wherein said siloxy diazotized surface comprises a plastic surface.

100. The method of claim 99, wherein said siloxy diazotized surface comprises polyethylene terephthalate.

101. The method of claim 76, wherein said siloxy diazotized surface comprises a silicon wafer.

102. The method of claim 76, wherein said siloxy diazotized surface comprises a ceramic surface.

103. The method of claim 76, wherein said siloxy diazotized surface comprises a ceramic surface.

104. The method of claim 76, wherein said siloxy diazotized surface comprises a clay surface.

105. The method of claim 76, wherein said siloxy diazotized surface comprises a siloxy amine diazonium group.

106. The method of claim 105, wherein said siloxy amine diazonium group comprises p-diazoniumphenyltrimethoxysilane salt.

107. The method of claim 76, wherein said at least one biomolecule comprises a plurality of biomolecules.

108. The method of claim 107, wherein said plurality of biomolecules comprises at least two different biomolecules.

109. The method of claim 76, wherein said biomolecule comprises single-stranded DNA.

110. The method of claim 76, wherein said biomolecule comprises double-stranded DNA.

111. The method of claim 76, wherein said biomolecule comprises protein.

112. The method of claim 76, wherein said biomolecule comprises a ribozyme.

113. The method of claim 76, wherein said biomolecule comprises RNA.

114. The method of claim 76, wherein said biomolecule comprises an aptamer.

115. The method of claim 76, wherein said siloxy diazotized surface is part of a substrate having a thickness of approximately 1 mm.

116. A method for forming a siloxy diazotized surface comprising:
treating an oxidized surface with a siloxy amine to form a siloxy amine treated surface; and
treating said siloxy amine treated surface with a diazotizing agent to form a siloxy diazotized surface.

117. The method of claim 116, wherein said siloxy amine comprises a primary aromatic amine.

118. The method of claim 117, wherein said siloxy amine comprises p-aminophenyl trimethoxysilane (ATMS).

119. The method of claim 116, wherein said siloxy amine treated surface is formed by treating said oxidized surface with a siloxy amine comprising a primary aromatic amine.

120. The method of claim 119, wherein said siloxy amine comprises p-aminophenyl trimethoxysilane (ATMS).

121. The method of claim 116, wherein said diazotizing agent comprises $NaNO_2$ and HCl.

122. The method of claim 116, wherein said siloxy diazotized surface is formed from said siloxy amine treated surface by exposing said siloxy amine treated surface to 5.2 mM $NaNO_2$ and 0.26 M HCl at 0-5 degrees centigrade for 30 minutes.

123. The method of claim 116, wherein said siloxy diazotized surface is formed from said siloxy amine treated surface by exposing said siloxy amine treated surface to 5.2 mM $NaNO_2$ and 0.26 M HCl at 0-5 degrees centigrade for 10-30 minutes.

124. The method of claim 116, wherein said siloxy diazotized surface is formed from said siloxy amine treated surface by exposing said siloxy amine treated surface to 5.2 mM $NaNO_2$ and 0.26 M HCl at 5-15 degrees centigrade for 30 minutes.

125. The method of claim 116, wherein said siloxy diazotized surface is formed from said siloxy amine treated surface by exposing said siloxy amine treated surface to 5.2 mM $NaNO_2$ and 0.26 M HCl at 5-15 degrees centigrade for 10-30 minutes.

126. The method of claim 116, wherein said siloxy diazotized surface is formed from said siloxy amine treated surface by exposing said siloxy amine treated surface to 5.2 mM $NaNO_2$ and 0.26 M HCl at 15-25 degrees centigrade for 30 minutes.

127. The method of claim 116, wherein said siloxy diazotized surface is formed from said siloxy amine treated surface by exposing said siloxy amine treated surface to 5.2 mM $NaNO_2$ and 0.26 M HCl at 15-25 degrees centigrade for 10-30 minutes.

128. The method of claim 116, wherein said siloxy diazotized surface is formed from said siloxy amine treated surface by exposing said siloxy amine treated surface to 5.2 mM $NaNO_2$ and 0.26 M HCl at room temperature for 30 minutes.

129. The method of claim 116, wherein said siloxy diazotized surface is formed from said siloxy amine treated surface by exposing said siloxy amine treated surface to 5.2 mM $NaNO_2$ and 0.26 M HCl at room temperature for 10-30 minutes.

130. The method of claim 116, further comprising treating a substrate surface with an oxidizing agent to form an oxidized surface.

131. The method of claim 130, wherein said substrate surface comprises a polymer surface.

132. The method of claim 131, wherein said substrate surface comprises a plastic surface.

133. The method of claim 132, wherein said substrate surface comprises polyethylene terephthalate.

134. The method of claim 116, wherein said siloxy diazotized surface comprises a glass surface.

135. The method of claim 134, wherein said siloxy diazotized surface comprises a glass bead.

136. The method of claim 134, wherein said siloxy diazotized surface comprises a glass slide.

137. The method of claim 116, wherein said siloxy diazotized surface comprises a polymer surface.

138. The method of claim 137, wherein said siloxy diazotized surface comprises a plastic surface.

139. The method of claim 138, wherein said siloxy diazotized surface comprises polyethylene terephthalate.

140. The method of claim 116, wherein said siloxy diazotized surface comprises a silicon wafer.

141. The method of claim 116, wherein said siloxy diazotized surface comprises a ceramic surface.

142. The method of claim 116, wherein said siloxy diazotized surface comprises a metal oxide surface.

143. The method of claim 116, wherein said siloxy diazotized surface comprises a clay surface.

144. The method of claim 116, wherein said siloxy diazotized surface comprises a siloxy amine diazonium group.

145. The method of claim 144, wherein said siloxy diazonium group comprises p-diazoniumphenyltrimethoxysilane salt.

146. A method for using a microarray comprising the steps of:

contacting said microarray with a plurality of first free biomolecules to hybridize at least a portion of said plurality of first free biomolecules to bound biomolecules of said microarray; and

removing said first free biomolecules from said microarray without removing said bound biomolecules from said microarray.

147. The method of claim 146, further comprising the step of contacting said microarray with a plurality of second free biomolecules to hybridize at least a portion of said second free biomolecules to said bound biomolecules of said microarray.

148. The method of claim 146, further comprising the step of repeating step contained in claim 147.

149. The method of 146, wherein said microarray comprises:

a substrate comprising a siloxy diazotized surface; and

said bound molecules covalently bound to said siloxy diazotized glass surface.

150. The method of claim 149, wherein said bound biomolecule comprises a plurality of biomolecules.

151. The method of claim 150, wherein said plurality of biomolecules comprises at least two different biomolecules.

152. The method of claim 149, wherein said bound biomolecule comprises single-stranded DNA.

153. The method of claim 149, wherein said bound biomolecule comprises double-stranded DNA.

154. The method of claim 149, wherein said bound biomolecule comprises protein.

155. The method of claim 149, wherein said bound biomolecule comprises a ribozyme.

156. The method of claim 149, wherein said bound biomolecule comprises RNA.

157. The method of claim 149, wherein said bound biomolecule comprises an aptamer.

158. The method of claim 146, wherein said microarray comprises:
a substrate comprising a thiolate diazotized surface; and
said bound molecules covalently bound to said thiolate diazotized noble metal surface.

159. The method of claim 158, wherein said bound biomolecule comprises a plurality of biomolecules.

160. The method of claim 159, wherein said plurality of biomolecules comprises at least two different biomolecules.

161. The method of claim 158, wherein said bound biomolecule comprises single- stranded DNA.

162. The method of claim 158, wherein said biomolecule comprises double-stranded DNA.

163. The method of claim 158, wherein said biomolecule comprises protein.

164. The method of claim 158, wherein said biomolecule comprises a ribozyme.

165. The method of claim 158, wherein said bound biomolecule comprises RNA.

166. The method of claim 158, wherein said bound biomolecule comprises an aptamer.

167. A thiolate diazotized surface.

168. The thiolate diazotized surface of claim 167, wherein said thiolate diazotized surface comprises a noble metal surface.

169. The thiolate diazotized surface of claim 168, wherein said thiolate diazotized surface comprises a gold surface.

170. The thiolate diazotized surface of claim 168, wherein said thiolate diazotized surface comprises a silver surface.

171. The thiolate diazotized surface of claim 168, wherein said thiolate diazotized surface comprises a copper surface.

172. The thiolate diazotized surface of claim 167, wherein said thiolate diazotized surface comprises a thiolate amine diazonium group.

173. The thiolate diazotized surface of claim 172, wherein said thiolate amine diazonium group comprises p-diazoniumthiophene salt.

174. The thiolate diazotized surface of claim 167, wherein said diazotized surface is part of a substrate having a thickness of approximately 1 mm.

175. A method for forming a microarray comprising:

treating a noble metal surface with a thiolate amine to form a thiolate amine treated surface;

treating said thiolate amine treated surface with a diazotizing agent to form a thiolate diazotized surface; and

contacting said thiolate diazotized surface with at least one biomolecule to form a microarray in which said at least one biomolecule is covalently bound to said thiolate diazotized surface.

176. The method of claim 175, wherein said thiolate amine comprises a primary aromatic amine.

177. The method of claim 176, wherein said thiolate amine comprises 4-aminothiophene.

178. The method of claim 175, wherein said thiolate amine treated surface is formed by treating said noble metal surface with a thiolate amine comprising primary aromatic amine.

179. The method of claim 178, wherein said thiolate amine comprises 4-aminothiophene.

180. The method of claim 175, wherein said biomolecule contains a powerful electron-releasing group.

181. The method of claim 175, wherein said diazotizing agent comprises $NaNO_2$ and HCl.

182. The method of claim 175, wherein said thiolate diazotized surface is formed from said thiolate amine treated surface by exposing said thiolate amine treated surface to 5.2 mM $NaNO_2$ and 0.26 M HCl at 0-5 degrees centigrade for 30 minutes.

183. The method of claim 175, wherein said thiolate diazotized surface comprises a noble metal surface.

184. The method of claim 183, wherein said thiolate diazotized surface comprises a gold metal surface.

185. The method of claim 183, wherein said thiolate diazotized surface comprises a silver metal surface.

186. The method of claim 183, wherein said thiolate diazotized surface comprises a copper metal surface.

187. The method of claim 175, wherein said thiolate diazotized surface comprises a thiolate amine diazonium group.

188. The method of claim 187, wherein said thiolate amine diazonium group comprises p-diazoniumthiophene salt.

189. The method of claim 175, wherein said at least one biomolecule comprises a plurality of biomolecules.

190. The method of claim 189, wherein said plurality of biomolecules comprises at least two different biomolecules.

191. The method of claim 175, wherein said biomolecule comprises single- stranded DNA.

192. The method of claim 175, wherein said biomolecule comprises double-stranded DNA.

193. The method of claim 175, wherein said biomolecule comprises protein.

194. The method of claim 175, wherein said biomolecule comprises a ribozyme.

195. The method of claim 175, wherein said biomolecule comprises RNA.

196. The method of claim 175, wherein said biomolecule comprises an aptamer.

197. The method of claim 175, wherein said thiolate diazotized surface is part of a substrate having a thickness of approximately 1 mm.

198. A method for forming a thiolate diazotized surface comprising:
treating a noble metal surface with a thiolate amine to form a thiolate amine treated surface; and
treating said thiolate amine treated surface with a diazotizing agent to form a thiolate diazotized surface.

199. The method of claim 198, wherein said thiolate amine comprises a primary aromatic amine.

200. The method of claim 199, wherein said thiolate amine comprises 4-aminothiophene.

201. The method of claim 198, wherein said thiolate amine treated surface is formed by treating said noble metal surface with a thiolate amine comprising a primary aromatic amine.

202. The method of claim 201, wherein said thiolate amine comprises 4-aminothiophene.

203. The method of claim 198, wherein said diazotizing agent comprises $NaNO_2$ and HCl.

204. The method of claim 198, wherein said thiolate diazotized surface is formed from said thiolate amine treated surface by exposing said thiolate amine treated surface to 5.2 mM $NaNO_2$ and 0.26 M HCl at 0-5 degrees centigrade for 30 minutes.

205. The method of claim 198, wherein said thiolate diazotized surface comprises a noble metal surface.

206. The method of claim 205, wherein said thiolate diazotized surface comprises a gold surface.

207. The method of claim 205, wherein said thiolate diazotized surface comprises a silver surface.

208. The method of claim 205, wherein said thiolate diazotized surface comprises a copper surface.

209. The method of claim 205, wherein said thiolate diazotized surface comprises a thiolate amine diazonium group.

210. The method of claim 209, wherein said thiolate amine diazonium group comprises p-diazoniumthiophene salt.

211. A kit, comprising:
a siloxy amine treated surface; and
a diazotizing agent.

212. The kit of claim 211, further comprising at least one biomolecule.

213. The kit of claim 212, wherein said biomolecule is DNA.

214. The kit of claim 212, wherein said biomolecule is protein.

215. The kit of claim 212, wherein said biomolecule is RNA.

216. The kit of claim 211, wherein said surface has been stabilized.